this remain to Ireland, and of securing its preservation by placing it in its most fitting depository, the national museum of our Academy.

Dr. Petrie then moved that the warmest thanks of the Academy be presented to Dr. Russell, for his kindness in permitting these interesting remains to be exhibited at this meeting, and for allowing them to remain so long in the museum of the Academy.

This motion was seconded by Dr. Todd, and passed unanimously.

MARCH 16, 1851.—(STATED MEETING.)

HUMPHREY LLOYD, D. D., PRESIDENT, in the Chair.

THE Secretary of the Academy read the following Report from the Council:

The second part of the twenty-second volume of the Transactions of the Academy has been published, and the third part is in an advanced state.

The fourth volume of the Proceedings has also been completed, containing an account of the papers read and communications made to the Academy from November 8, 1847, to the 24th June last.

During the past year, as the Academy are already aware, considerable progress has been made in the meteorological and tidal observations, which have been for some time going on under the superintendence of the Committee of Science. The annexed Report, presented by that Committee to the Council, will give the Academy full information as to the progress and present state of this important undertaking.

The Academy are aware that there has been a great effort made during the past year to raise by subscription the amount necessary for completing the purchase of the Betham MSS. There remains now to be collected only the small sum of £38 12*s.*, in order to fulfil the engagement made with Sir William Betham by Mr. Graves, and

to render that curious and valuable collection of MSS. the property of the Academy. The Council cannot but express the hope that the friends of Irish literature will soon enable Mr. Graves to report that this sum has been raised, in order that the full balance due to Sir William Betham may be at once handed over to him, and this transaction, so long pending, may finally be wound up.

The following articles of antiquity have been purchased by the Committee of Antiquities during the past year, from the small funds intrusted to them by the Academy:

October 16, 1850.—A bronze figure, curiously inlaid with gold, representing a bishop *in pontificalibus*, holding his crozier in both hands. This figure is supposed to have belonged to an ancient box or shrine; and from the style of art, and the form of the mitre and crozier, is probably a work of the twelfth century.

—— A gold bracelet, consisting of a solid cylindrical bar, weighing 3oz. 15dwts.: the extremities rudely ornamented by engraved lines.

The following articles having been purchased from different parties by Mr. Clibborn, were approved by the Committee, on the same day:

1. A brass pipe-stopper, with the head of King Charles I.

2. A wooden tray, with a very rudely carved head in wood, found in the bog of Allen. The ear is peculiar, resembling that of a satyr; and a fragment remains of one hand applied to the right cheek.

3. The seal of the clergy of Emly, in bronze, fourteenth century.

4. Ancient bronze chisel of a peculiar and rare form.

October 21st, 1850.—A gold lunette or collar, weighing 1oz. 10dwts. 12grs.

November 11, 1850.—A similar gold crescent (but with peculiar and very ancient ornaments) in three fragments, weighing 16dwts.

—— An ancient bronze vessel, with small feet of an unusual construction. Found near Dungiven, in the county Derry.

A large deep pan, of thin bronze. Found in the county Fermanagh.

December 2, 1850.—An ancient Irish crozier head, supposed to

be the remains of the crozier of St. Blathmac, of Rath-Blathmac, near Corofin, in the county Clare; and two ancient bronze ecclesiastical bells from the same place.

December 18.—The shaft and upper boss of a very ancient crozier, supposed to be the crozier of St. Columba, formerly belonging to the abbey of Durrow, in the County Meath; also eleven Anglo-Saxon coins, found at Durrow; two bronze pins, one of them very ancient, found at Moate; with a silver bodkin, and a horn powder-flask of the reign of William III.

This crozier, although unfortunately much mutilated, is of peculiar historical interest: it still retains some traces of its original magnificence, and must have been a beautiful specimen of ancient Irish art. It was preserved, since the dissolution of monasteries, by the Macgeoghan family, lately represented by Sir Richard Nagle, Bart., at whose death it became the property of Mr. Nugent, who consented to part with it for the Museum, along with the other antiquities here mentioned.

Several valuable donations have also been made to the Museum, which have already been acknowledged by the thanks voted to the several donors by the Academy. A list of them will appear in the forthcoming volume of the Transactions.

The *Mias Tighernain*, an ancient relic which was deposited in the Museum, by its owner, at the instance of Dr. Wilde, and which was the subject of a valuable paper by that gentleman, published some time ago in the Transactions,* has recently been returned, through Dr. Wilde, to its proprietor, Mr. Knox, of Rappa Castle. The thanks of the Academy are due to Mr. Knox, and to the other possessors of remarkable antiquities, for the important service they have rendered to the science of archæology, by depositing such antiquities for a season in our Museum, and permitting the Academy to preserve correct drawings of them.

The Council regret very much that no steps appear to have been taken during the past year towards the preparation of the Catalogue of the Academy's Museum.

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During the past year the following new Members have been elected:

Signor Basilio Angeli.	Daniel Griffin, M. D.
William H. Hardinge, Esq.	Henry Hennessy, Esq.
Robert Fowler, Esq.	Andrew John Maley, Esq.
Hugh Carlile, M. D.	Sir Francis Waskett Myers.
R. Clayton Browne, Esq.	William Harvey Pim, Esq.
James Gibson, Esq.	Ewing Whittle, Esq.
Rev. Orlando T. Dobbin, LL.D.	St. George Williams, M.D.
Samuel Gordon, M. D.	William Oliver Barker, M. D.

The following Honorary Members have been elected:

IN THE DEPARTMENT OF SCIENCE.

Alexander D. Bache.

IN THE DEPARTMENT OF POLITE LITERATURE.

Augustus Boeck.
Victor Cousin.
Washington Irving.
A. Thiers.

IN THE DEPARTMENT OF ANTIQUITIES.

G. T. Grotefend.
L. C. F. Petit Radel.

The following Members have been removed by death during the past year:

1. ANDREW ARMSTRONG, Esq., A. M.; elected a member of the Academy, 30th November, 1833: died in Trinity College, on the 22nd of December last.

2. ABRAHAM ABELL, Esq., died at his house in Cork, on the 12th February, 1851, in the sixty-eighth year of his age. He was elected a member of the Academy 11th May, 1840. Mr. Abell was well known in his native city for his zeal and activity in promoting the welfare of the literary, scientific, and charitable societies of Cork. He was one of the founders of the Scientific and Literary Society, as well as of the Cuverian Society of that city. He was treasurer of the Cork Library, and a manager of the Cork Institu-

tion. To him we are indebted for having directed the attention of the public and the renewed zeal of Irish antiquaries to the subject of the Ogham inscriptions. He collected from various places a great number of stones inscribed with Ogham characters, and pointed out the importance of examining the inscriptions themselves, instead of depending upon hastily made copies of them, as had previously been the usual course adopted by those who attempted their interpretation. This valuable collection of Ogham stones is now in the museum of the Cork Institution. Mr. Abell was a member of the Society of Friends, and was remarkable for his enlightened philanthropy, and the variety of his literary tastes.

3. The Right Honourable WINDHAM HENRY WYNDHAM QUIN, Earl of Dunraven and Mount Earl, &c., died at Adare Manor, in the County Limerick, August 6, 1850, in the sixty-eighth year of his age.

Lord Dunraven was elected a Member of the Academy on the 22nd May, 1843. He had been a Member of the Imperial Parliament for several years, having been first elected as representative of the County Limerick in 1806. He succeeded to the peerage on the death of his father in 1824, and was chosen a representative peer in 1839.

4. RICHARD SHARPE, Esq., elected a Member of the Academy, 13th January, 1845.

Mr. Sharpe had an hereditary claim to eminence in the noble department of practical science, to which his life was devoted. The chronometers made by his father are still highly prized by those who possess them, and the equatorial made by him for the Observatory of the University is probably more steady than any other instrument of equal dimensions in existence.

The son, however, with equal practical dexterity and zeal for his profession, exceeded the father in inventive powers. Many of his contrivances have been honoured with medals from the Royal Dublin Society and other scientific institutions. But those which have in this way become known to the public bear a very small proportion to the numerous inventions of which no record is preserved. Three of the more remarkable of these may be here noticed.

1. His method of figuring the acting surfaces of the dead beat,

a scapement which, after the experience of a century and a half, still holds the first place with astronomers ;

2. The chronograph, in which he carried out the views of Mr. Bergin; and

3. The apparatus which he applied to the pendulum of the principal clocks of the Armagh Observatory.

In the first of these the pallats must combine extreme hardness with perfect truth, especially on the cylindric surfaces from which the scapement derives its peculiar properties. By a simple application of the revolving lap, which when seen is self-evident, he constructed them, even in hard steel or sapphire, with almost mathematical truth.

In the chronograph the task required was to trace on an uniformly revolving disc a spiral line, which could be dislocated during the continuance of any phenomenon, and thus preserve a graphic record of the time on a highly magnified scale.

A little before his death Mr. Sharpe was engaged by Mr. Cooper to combine this principle with the conical pendulum, and would probably have made an instrument capable of being applied with singular advantage to the electro-telegraphic mode of observation, recently invented in America.

The third was intended to obviate a defect which Dr. Robinson suspected to exist in the means of connecting a pendulum with the wheel-work which maintains its motions. This is done in general by a crutch connected by its arbor with the pallats, and at its extremity driving the pendulum rod ; the axis of that arbor should be in the same line with the centre of the pendulum's rotation, but this condition can neither be certainly fulfilled nor verified. Mr. Sharpe joined the rod and crutch by a spring resembling a flattened figure of 8, which is of scarcely appreciable elasticity in the vertical direction, but so rigid in the horizontal that it transmits undiminished the full power of the train.

Mr. Sharpe died at his house in Dublin on the 13th of April, 1850, at the early age of thirty-one.

5. Rev. Nicholas John Halpin, elected a Member of the Academy, 10th February, 1845. He was born 18th of October, 1790, at Portarlington, in the Queen's County. He entered Trinity College, Dub-

lin, in the year 1810, and was early distinguished for talent in literary composition. While an undergraduate he gained several Vice-Chancellor's Prizes, and medals at the Historical Society, for English verse. He was ordained in 1816, and appointed soon after to the curacy of Oldcastle, in the diocese of Meath, which he held for nearly twenty years. He was struck with paralysis on the 4th of April, 1850; and, after a painful illness, expired on the 22nd of November, 1850, aged 60. Except a few sermons, and other professional tracts, Mr. Halpin published little; but he has read here from time to time some essays on subjects connected with the dramatic and poetical literature of the Elizabethan period. His principal publications were in connexion with the Shakspearian Society. "Oberon's Vision," a beautiful illustration of a remarkable passage in the "Midsummer Night's Dream," was published in 1843, and attracted considerable attention. "The Bridal Runaway," or an examination of a passage in "Romeo and Juliet," appeared in 1845. Both these tracts are among the Shakspearian Society's publications.

His last work was entitled "The dramatic Unities of Shakspeare." This was published in 1849, and is an ingenious examination of the way in which Shakspeare managed to preserve the illusion necessary for the purposes of the drama, and the artifices by which, in his works, he overcomes the difficulty of exhibiting, within the time which the performance of an hour or two occupies, the incidents of a story occupying, in their actual occurrence, a much longer period. The principle by which Mr. Halpin thinks that Shakspeare's management of time is governed, he illustrates by an examination of the story of the "Merchant of Venice." Mr. Halpin was a Member of the Council of the Academy, on the Committee of Polite Literature, for the last two years.

The following Honorary Members died during the past year:

1. The Right Hon. the Marquis of Northampton, died 16th January, 1851.

2. William Wordsworth, died 25th April, 1850.

3. Thomas Amyot, Esq., died 28th September, 1850.

THIRD REPORT OF THE COMMITTEE OF SCIENCE RELATIVE TO THE METEOROLOGICAL AND TIDAL OBSERVATIONS.

[Received by the Council, March 8, 1851.]

The Committee of Science, having been intrusted with the organization and superintendence of the Meteorological and Tidal Observations, believe it to be their duty to submit to the Council an account of the progress of that undertaking, from the period of their last Report on the subject to the present time.

At the period referred to, the plan of observation had been definitively arranged; the coast-guard stations had been selected, with the sanction of the Comptroller-General; and the necessary orders had been issued by that officer to the inspecting commanders of the several districts. The Committee, in consequence, placed themselves in communication with these officers, and the result of that communication has been a partial modification of the arrangement of the stations originally proposed. Portrush, in the county of Antrim, has been substituted for Ballycastle; and Killybegs, in the county of Donegal, for Mullaghmore. Old Head and Ardglass were subsequently abandoned as tidal stations, chiefly on account of difficulties connected with the erection of the tide-gauges; but the Committee deeming it important that their places should be supplied by new stations on the north-eastern and western coasts, an application was made by the Council to the Comptroller-General on the subject, in the month of October, the result of which has been the establishment of the tidal stations of Cushendall, in the county of Antrim, and Bunown, in the county of Galway. The coast-guard stations, twelve in number, are accordingly the following:—On the East Coast—Portrush, Cushendall, Donaghadee, Kingstown, Courtown, and Dunmore east; and on the West Coast—Buncrana, Killybegs, Bunown, Kilrush, Cahirciveen, and Castletownsend.

Upon the suggestion of the Committee, an application was made by the Council to the Ballast Board, requesting their co-operation. This application was favourably received, and orders were in consequence issued to the light-keepers at some of the principal light-

houses round the coast, directing them to give the required aid in the meteorological observations. The situation of the light-houses being generally elevated and exposed, co-operation in the tidal observations was deemed impracticable. As the result of this negociation, meteorological observations are now carried on, on the plan laid down by the Council, at the light-houses of Killough, in the county of Down, Killybegs, in the county of Donegal, and Inishgort, in the county of Mayo.

Concurrently with these arrangements, the necessary instruments were ordered from Mr. Yeates and Mr. Dobbyn, the details of their form and construction having been previously considered by the Committee, and the estimates for their cost submitted to the Council and approved of. They were completed in the beginning of July last, and were soon after forwarded to the stations then agreed upon, all the thermometers having been previously compared with the standards belonging to the Dublin Magnetical Observatory. The tubes required for the tide-gauges being of considerable dimensions, and these dimensions being necessarily different in different localities, it was thought advisable that they should be constructed at the stations. Directions for their construction were, in consequence, prepared, and a printed copy forwarded to each station.

In the months of September and October all the stations then agreed on were visited, on the part of the Committee, by Dr. Lloyd, Mr. Haughton, and Dr. Apjohn, for the purpose of superintending the erection of the instruments, and of instructing the observers in their use. The visitors likewise conveyed, by hand, the barometer tubes (previously filled with care), to the several stations, measured the heights of the cisterns, and compared the instruments, when erected, with the standard barometer of the Dublin Magnetical Observatory, by means of good portable barometers. They also measured the differences of level between the zeros of the tide-gauges and the Ordnance bench-marks, where such existed in the locality.

In the end of December the recently added coast-guard stations of Cushendall and Bunown, and the light-houses of Killough and Inishgort, were, in like manner, visited by Dr. Lloyd, Mr. Haughton, and Mr. Galbraith, and were soon after in full operation. The

expenses of these tours of inspection having been undertaken by the parties themselves, are thereby saved to the Academy.

The following is a memorandum of the principal facts connected with the several stations:

East Coast Stations.

PORTRUSH (Co. Antrim).—The tide-gauge is erected in an angle of the northern pier, close to the spot at which the tidal observations were made in 1842. It was found necessary, however, to deepen the spot by the removal of rubble, and to protect the dial, by cross beams of timber, from the hawsers of vessels approaching the quay. The zero of the tide-gauge is 12·33 feet below the bench-mark on the quay.

The barometer is put up in the guard-house, which is situated on an eminence facing the harbour; and the thermometers and the rain-gauge in a small attached garden. The height of the cistern of the barometer, above the bench-mark, is 23·4 feet. The diameter of the tube is 0·28 of an inch. The four thermometers at this, and at every other station, are inclosed in a shallow box with a sloping roof, open in front.

A vertical gnomon is fixed in the window sill of the guard-house, for the purpose of deducing the time of noon; and the observers are furnished at this, and at all the other stations, with a table of the equation of time computed for the present year, and for the mean longitude of Ireland.

CUSHENDALL (Co. Antrim).—The tide-gauge is erected on the landward side of the new pier in Red Bay. The pier not being completed, it was found necessary to place the gauge at some little distance, so as to stand clear of the sloping side. It is fixed in its place by a frame-work of wooden spars, bound together by ropes and chains; and is connected with the pier by a platform, on which a hurricane-house is erected for the shelter of the observer. The time of noon is obtained from a meridian line, marked by a picket driven into the ground, to the north of the coast-guard flag-staff.

No meteorological observations are taken at this station.

DONAGHADEE (Co. Down).—This is an excellent station for both meteorological and tidal observations. The tide-gauge is erected on

the side of the pier, close to the Ordnance bench-mark, and near the guard-house; it is well sheltered, and in deep water. The zero of the tide-gauge is 19·80 feet below the Ordnance bench-mark.

The meteorological instruments are likewise favourably placed: the barometer in the guard-house, and the thermometers and rain-gauge in an inclosed yard connected with it. The meridian line is traced on the sill of a window in the guard-house. The height of the cistern of the barometer was not measured; it is between 3 and 4 feet above the bench-mark. The diameter of the tube is 0·30 of an inch.

Killough (Co. Down).—Lighthouse, St. John's Point.—This is a meteorological station only, and is well circumstanced for such observations. The barometer is put up in the hall of the light-keeper's dwelling; the other meteorological instruments are well placed in a garden attached to it. The meridian-line is traced on the flagging, at the south side of the house, the shadow being given by a vertical iron rail. The cistern of the barometer is 7·8 feet above the base of the light-house tower; the diameter of the tube is 0·28 inch.

Kingstown Harbour (Co. Dublin).—This is a station for tidal observations only. The tide-gauge is erected in the angle at the inner side of the new harbour. This locality is very favourable, as the water is deep, and the case is protected by the pier from the waves which enter the outer harbour from the north-east. The time at this station is taken from the clock of the Dublin and Kingstown Railway.

Courtown Harbour (Co. Wexford).—The tide-gauge at Courtown Harbour is erected beside the wooden pier, which is now used for the unlading of vessels, in consequence of the filling up of the harbour originally built. The situation of the gauge is very much exposed; but as the station was considered by the Committee to be important, it was determined to attempt making the observations with the gauge lashed to the pier. Hitherto the observations have been but seldom interrupted by the violence of the sea.

The barometer is erected in the guard-house belonging to the station; the thermometers and rain-gauge in the garden attached to it, and are in charge of the chief boatman. The diameter of the baro-

meter tube is 0·28 of an inch. The time, at noon, is taken from a brass vertical gnomon, erected on the sill of the guard-house window, facing the south.

DUNMORE EAST (Co. Waterford).—The tide-gauge at this station is erected in an angle of the pier, by which it is sheltered from the large waves which enter the mouth of Waterford Harbour from the south and south-west; it is also protected by a strong chain from the injuries which might be caused by the accidental rubbing of the large fishing-boats which frequent Dunmore Harbour. Although the water is not very deep, there is sufficient depth at spring tides to secure the accuracy of the observations recorded by the instrument. The zero of the tide-gauge is 17·34 feet below the bench-mark on the pier.

The meteorological instruments are erected at the guard-house of the station, which is at a higher elevation than the tide-gauge; the cistern of the barometer being 55·4 feet above the bench-mark. The diameter of the tube is 0·32 of an inch. The time at noon is found by means of a brass vertical gnomon erected in the window of the guard-house.

West Coast Stations.

BUNCRANA (Co. Donegal).—The tide-gauge was at first erected at Buncrana, attached to a rock near the mouth of the river, by means of iron stanchions; but, on inspection, the site was found to be wholly unsuitable. The instrument was, therefore, with the consent of the inspecting commander of the station, removed to Rathmullan, at the opposite side of Lough Swilly, where it is erected in a good situation, at the head of the pier. A hurricane house has been fixed on the pier, for the shelter of the observer. The meridian line is laid down to the north of the coast-guard flagstaff.

The meteorological instruments are put up at the guard-house at Buncrana, in charge of the chief boatman; the site is not as favourable as could be wished. The height of the cistern of the barometer above high water (spring tides) is forty feet. The diameter of the tube is 0·34 of an inch.

KILLYBEGS (Co. Donegal).—Much difficulty was experienced

in making the arrangements for the tidal observations at this station. There are three piers at the town, all well sheltered; but, unfortunately, all dry at low water spring tides. The tide-gauge was consequently abandoned, and two tide-poles employed in its stead. One of these is fixed to the pier in the immediate vicinity of the guard-house, and the other fastened to a rock at a short distance from the shore, the latter being used only when the base of the pier is dry at low water spring tides. The term observations alone are taken. The gnomon, for the time, is fixed to the sill of the window in the guard-house.

It was found advisable to separate the meteorological from the tidal observations at this station, and to intrust the former to the keeper of the light-house at St. John's Point, near Killybegs, the permission of the Ballast Board having been previously obtained. This light-house is admirably circumstanced for meteorological observations. The Academy's barometer was not put up, the barometer belonging to the light-house being found sufficiently good; it is favourably placed in the sitting room of the light-keeper's dwelling. The thermometers are in an angle of the yard at the back of the house; the rain-gauge is attached to an iron railing in the front yard. There is a sun-dial in the front yard, the position of which was examined, and found correct.

Inishgort Light-house, Clew Bay (Co. Mayo).—The whole of Clew Bay was examined with the intention of erecting a tide-gauge; but as there is no pier in the bay which is not left dry at low water, the Committee of Science were obliged reluctantly to give up tidal observations at this important locality. The meteorological instruments are erected at the light-house of Inishgort, and are in charge of the keeper. The barometer belonging to the light-house was found sufficiently good for the observations. It is placed, with a thermometer near it, in the sitting room of the light-keeper. The external thermometers and rain-gauge are erected in a favourable site in the small garden attached to the light-house.

Bunown Bay (Co. Galway).—The tide-gauge is erected at the inner side of the new pier erected in this bay for the accommodation of fishing boats. It is protected by the pier from west and south-west winds, and has the advantage of deep water at the lowest

spring tides. So far as position is concerned, this is one of the most important stations on the west coast. The time at noon is found from a brass vertical gnomon, erected in the garden of the chief boatman's house.

No meteorological observations are taken at this station.

KILRUSH (Co. Clare).—The importance of having as many tidal stations as possible on the west coast, induced the Committee of Science to undertake the erection of a tide-gauge at Kilrush, although, from its being so far up the Shannon, the station was not as valuable as could be wished. The only place in which the gauge could be erected was at the extremity of the stone pier, facing the river, and consequently exposed to violent gales from the south-west. During the first few weeks of its existence it was twice washed away by the violence of the waves. The zero of the tide-gauge is 20·59 feet below the bench-mark at the pier-head. The time at noon is found by a gnomon attached to the flag-staff near the guard-house.

The meteorological instruments are erected in the guard-house of the station, and are in charge of the chief boatman. The cistern of the barometer is 6·4 feet above the bench-mark. The diameter of the tube is 0·32 of an inch.

CAHIRCIVEEN (Co. Kerry).—The tide-gauge at this station is placed in an angle above the bridge, in a very sheltered situation, and having the advantage of deep water at the lowest tides. The only objection to its position is that it is not situated on the open sea, and the tide at Cahirciveen must be considered as a river tide. There is no Ordnance bench-mark at this station. A provisional mark was therefore placed on the corner coping-stone of the bridge; and the zero of the tide-gauge was found to be 23·51 feet below it.

The barometer is erected in the house of the officer of the station, in the town of Cahirciveen, and the thermometers and rain-gauge in the garden attached to it. Their site is not very favourable. The cistern of the barometer is 37·0 feet above the mark on the bridge. The diameter of tube is 0·38 of an inch. The brass vertical gnomon, for finding the time at noon, is placed on the sill of a window of the officer's house.

CASTLETOWNSEND (Co. Cork).—The tide-gauge at this station is in an excellent position, although rather exposed. It is erected in the open sea, and is held in its place by guys and chains which are

made fast to the solid rock. The zero of the tide-gauge is 31·88 feet below the bench-mark at the foot of the flag-staff.

The meteorological instruments are placed in the guard-house, close to the tide-gauge. The cistern of the barometer is 7·0 feet below the bench-mark. The diameter of the tube is 0·26 of an inch. The time at this station is found by means of a brass gnomon, placed on the sill of the guard-house window, and a dipleidoscope belonging to the officer in command of the station.

In addition to the foregoing stations organized by the Academy, meteorological observations are also taken, on the plan laid down by the Council, at the Magnetical Observatory, Trinity College, Dublin; at the Observatory of Armagh, under the direction of Dr. Robinson; at the Observatory of Markree, under the direction of Edward J. Cooper, Esq.; at the Queen's Colleges of Belfast and Galway; at Portarlington, by Dr. Hanlon; and at Athy, by Alfred Haughton, Esq. There are thus, in all, eighteen meteorological, and twelve tidal stations, co-operating in the plan of the Academy.

It remains to say a few words of the financial position of this important undertaking.

The sum of £225 has been voted by the Academy, in two separate grants, for the purchase and erection of the instruments. This sum has been expended; and a detailed account of the expenditure is herewith laid before the Council.* Other sources of expenditure, not originally contemplated, have, however, arisen. The duties of the men employed in the tidal observations being very onerous, the Committee deem it important that they should be enabled to offer a moderate pecuniary reward to those observers who shall discharge them faithfully. In addition to this, other contingent expenses have been incurred, arising from accidental injuries to the instruments, and other causes.

To defray these additional expenses, a further sum of about £200 will be required; and, as the financial resources of the Academy are not such as to afford so large an outlay, it is proposed to raise it by subscription. A circular has accordingly been prepared, and is now in course of circulation, inviting the friends of science in he Academy, and in the country generally, to contribute, and thus

* See Appendix, No. I.

to enable the Committee to carry out to a successful issue an undertaking of great national and scientific importance.

The Committee cannot close this Report without recording the large measure in which the success of the present undertaking is due to the effective co-operation of the Comptroller-General of Coast Guard; and they feel sure, that the Academy will avail themselves of the earliest opportunity to express their grateful acknowledgments to that enlightened officer. They desire also to suggest, that the thanks of the Academy are likewise due to the Ballast Board, and to the other public bodies and individuals who have taken part in the undertaking, for their valuable aid.

It was Resolved,—That the Report of the Council be adopted, and printed in the Proceedings.

It was Resolved,—That the special thanks of the Academy be given to the Comptroller-General of the Coast Guard, for the zeal with which he has seconded the efforts of the Academy in the meteorological and tidal observations; and also that the thanks of the Academy be given to the Ballast Board, and other public bodies and individuals who have aided this undertaking.

The Ballot for the annual election having closed, the Scrutineers reported that the following gentlemen were elected Officers and Council for the ensuing year:

President.—Rev. Thomas R. Robinson, D. D.

Treasurer.—Robert Ball, LL. D.

Secretary to the Academy.—Rev. James H. Todd, D. D.

Secretary to the Council.—Rev. Charles Graves, D. D.

Secretary of Foreign Correspondence. — Rev. Samuel Butcher, D. D.

Librarian.—Rev. William H. Drummond, D. D.

Clerk and Assistant Librarian.—Mr. Edward Clibborn.

Committee of Science.

Sir William R. Hamilton, LL. D.; Rev. Humphrey Lloyd, D. D.; James Apjohn, M. D.; Robert Ball, LL. D.; Sir Robert Kane, M. D.; George J. Allman, M. D.; Rev. Samuel Haughton, A. M.

Committee of Polite Literature.

Rev. William H. Drummond, D. D.; Rev. Charles W. Wall, D. D.; John Anster, LL. D.; Rev. Charles Graves, D. D.; Rev. Samuel Butcher, D. D.; Digby P. Starkey, Esq.; Rev. John H. Jellett, A. M.

Committee of Antiquities.

George Petrie, LL. D.; Rev. James H. Todd, D. D.; J. Huband Smith, Esq., A. M.; Frederick W. Burton, Esq.; Samuel Ferguson, Esq.; Aquilla Smith, M. D.; the Earl of Dunraven.

The Rev. Humphrey Lloyd, D. D., having left the Chair, and John Anster, LL. D., V. P., having been called thereto,

It was Resolved unanimously,—That the most sincere and affectionate thanks of the Royal Irish Academy be, and that they are hereby presented, to their late President, the Rev. Humphrey Lloyd, D. D., for the dignity, diligence, and zeal, with which he has filled their chair, and otherwise attended to the interests of their body, during the last five years.

Sir William R. Hamilton communicated to the Academy a generalization of Pascal's theorem, to which he had been led by the method of quaternions.

Equation of Homodeuterism: $\Sigma(\pm \mathrm{ABCDEF.GHIK}) = 0$;

ABCDEF = *aconic* function of a hexagon;

GHIK = volume of a pyramid.

Sir Wm. R. Hamilton proposes to give a more full explanation of the nature of this equation of *homodeuterism*, and of